

REMARKS

Favorable reconsideration and allowance of this application are requested.

Claims 1-9 and 11-14 remain pending in this application in the form as presented with the applicants' Amendment dated November 30, 2009. As will become evident from the discussion which follows, applicants suggest that all pending claims are in condition for allowance.

1. Request for Record Clarification

Applicants note at the outset that page 1 of the February 22, 2010 Official Action purports that claims 13 and 14 are "withdrawn from consideration" and are "subject to restriction and/or election requirement". However, no such restriction and/or election requirement has been advanced with respect to claims 13 and 14. Moreover, claims 13 and 14 apparently have been rejected on their merits (see paragraphs 10 and 19 of the Official Action) thereby belying that such a restriction and/or election requirement has been advanced.

Thus, in order to be deemed fully responsive to the issues raised in the Official Action, applicants will treat the notation on page 1 of the Official Action with respect to the withdrawal of claims 13 and 14 as a typographical error and thus will address the substantive inappropriateness of the rejections advanced thereagainst.

2. Response to Substantive Rejections

The following rejections have now been advanced by the Examiner:

- (1) Claims 1-2, 4-9 and 11-12 have been rejected under 35 USC §103(a) as allegedly being unpatentable over Hass (USP 1,957,336) in view of Zorn (*Applied Microbiology and Biotechnology*, 62:331-336, 2003);

- (2) Claims 1-2, 4-9, 11 and 12-13¹ were rejected under 35 USC §1039a) as allegedly being obvious over Sugio et al (WO 02/086114) in view of Zorn;
- (3) Claim 14 has been rejected under 35 USC §1039a) as allegedly being obvious over Sugio et al in view of Zorn and further in view of Depew (*One Hundred Years of American Commerce*, 1795-1895); and
- (4) Claims 1, 3, 4-9 and 12 have been rejected under 35 USC §1039a) as allegedly being unpatentable over Roos et al (WO 2005/004616) in view of Zorn.

Applicants respectfully suggest that the rejections advanced in the Official Action are inappropriate against the pending claims herein.

Applicants again emphasize that the presently claimed invention involves a novel method for enzymatic bleaching of a food product which method is designed for a direct action on the pigment (i.e. act directly upon the pigment as substrate itself as noted on page 2, lines 16 and 17 of the specification) opposed to the indirect action of, for example, lipoxygenases on a pigment.

As was pointed out in the applicants' responsive Amendment dated November 30, 2009, each of the primary publications applied against the claims herein, namely Haas, Sugio et al and Roos et al suggest *indirect* enzymatic action. Specifically, as noted previously it is very likely that the bleaching agent of Haas is a lipoxygenase which has an *indirect* bleaching effect as disclosed in the present specification on page 1, lines 16-20. In other words, a lipoxygenase is

¹ The rejection in paragraph 10 of the official action actual asserts a rejection of claims 1, 2, 4-9, 12, and 12-13" which is considered to be a typographical error. Applicants have thus assumed that claim 11 was intended to be rejected along with claims 1-2, 4-9 and 12-13.

considered not to act directly on pigments but rather to generate peroxides or radicals that attack pigments indirectly.

Similarly Sugio et al describe a lipoxygenase from *Magnaporthe salvinii* while Roos et al describe the bleaching or whitening of a dairy product by using a lipoxygenase. Thus, as has been described already, the use of such lipoxygenase would have an *indirect* bleaching effect.

In essence, the Examiner is asserting that since Zorn allegedly discloses the “direct” cleavage of a pigment (i.e., β -carotene) by an enzyme, one of ordinary skill in the art would obviously substitute such a “direct converting enzyme” for those disclosed in the primary references (i.e., Haas, Sugio et al and Roos) so as to bleach a food product as claimed. Applicants suggest that such a position is erroneous and appears to be based on considerable impermissible “hindsight”.²

Specifically, the Examiner appears to be employing quite a bit of “hindsight” analysis in order to substitute the Zorn “direct converting enzyme” for the indirect enzymes of the primary publications discussed above, particularly since the former publication is disclosing the enzymes functionally to obtain taste compounds -- not to whiten a food product. It is manifestly understandable and reasonable to conclude that an ordinarily skilled person would not wish to impart any aroma or flavor to a food product by virtue of pigment cleavage (i.e., as explicitly suggested by Zorn) when it is desired to whiten such a food product. Stated another way, applicants suggest that it is statutorily *unobviousness* to whiten food by direct enzymatic action as claimed due to the fact that Zorn desires to obtain aroma or flavor compounds which thus would lead an ordinarily skilled person directly away from use of such enzymes for the purpose of

² The Federal Circuit regards hindsight as an insidious and powerful phenomenon and is a tempting, but forbidden zone in the inquiry of addressing the statutory obviousness standard. See, e.g., *Panduit Corp. v. Dennison Mfg. Co.*, 227 USPQ 337 (Fed. Cir. 1985) and *Loctite Corp. v. Ultraseal Ltd.*, 228 USPQ 90, 98 (Fed. Cir. 1985).

whitening a food product (i.e., a product where only the visual appearance (whiteness) is desired to be altered and not its aroma/flavor).

Thus, contrary to the Examiner's assertion, an ordinarily skilled person would not be motivated at all to substitute the direct converting enzyme of Zorn with the indirect enzymes of Haas, Sugio et al or Roos et al. Withdrawal of all rejections advanced under 35 USC §103(a) based on such combinations or publications is therefore in order.

The Depew publication adds nothing to Sugio et al and Zorn. Applicants do not dispute that stone bleaching per se is an old process. But applicants are not claiming to be the first inventors of stone bleaching per se. Thus, the analysis above with respect to the inappropriateness of combining Zorn with Sugio et al applies equally to the rejection of claim 14. In other words, Depew does not cure the deficiencies with respect to Sugio et al and Zorn as were previously discussed.

Early receipt of the Official Allowance Notice is solicited.

3. Information Disclosure Statement

The Examiner's attention is directed to the concurrent filing of a Supplemental Information Disclosure Statement. Consideration of the information cited therein is requested for which purpose a formal Request for Continued Examination (RCE) under 37 CFR § 1.114 is also being filed concurrently with the same.

MUTSAERS et al
Serial No. 10/584,921
July 19, 2010

4. Fee Authorization

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

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